



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,423	02/04/2002	Takehiro Shirai	NAGAT21.001CP1	3059
20995	7590	04/06/2004	EXAMINER	
KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614			WOJCIECHOWICZ, EDWARD JOSEPH	
			ART UNIT	PAPER NUMBER
			2815	

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/068,423

Applicant(s)

SHIRAI ET AL.

Examiner

Edward J Wojciechowicz

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6-12,25,28 and 40-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25,40 and 42 is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-12,28,41,43-46,49 and 50 is/are rejected.
- 7) ☒ Claim(s) 47,48 and 51-60 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 4, 6-12, 28, 41, 43-46, 49, and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by Saito, of record. Saito shows the features of the claims, as amended. For example, independent claim 1 appears to be met by Fig. 9(d) of Saito with a substrate having first and second surfaces, a stacking structure, e.g. layers (94), (491) and (492), including a semiconductor layer (94) making a junction for photoelectric conversion, a trench formed in the stacking structure, a first electrode (92) partially formed on each section of the stacking structure (i.e. each side of the trench), and allowing incident light on the layer (94), a second electrode (91) formed on the second surface of the device, a window formed in the second electrode to allow incident light (90) to pass through the second surface, as claimed.

Independent claims 8, 28, and 43 are also met by the structure of Fig. 9(b) of Saito, including a cladding layer (93) which is formed on a layered structure including the absorption layer (94) and region (95), a cathode (91) formed on the second surface and exposing an area on the second surface corresponding to the light receiving region, as claimed.

The structure of independent claim 41 would appear to be met by the device shown in Fig. 29(b) where a trench (292) separates adjacent light absorbing regions, and where electrical contacts (297) are arranged with gaps on the surface that inhibit light reflections between absorbing regions, as claimed.

The features of independent claim 44 would appear to be met by the structure shown in Figs. 7 or 9 where the means for reducing crosstalk would be met by the grooves (71) which serve to inhibit light transfer between adjacent absorbing regions, as claimed.

Art Unit: 2815

The features of the dependent claims are also shown by the various embodiments of Saito. For example, with regard to claims 3, 4, and 9, Saito describes in col. 14, l.54, the use of a SIPOS layer (106) which acts as an antireflection layer, shown for example, in Fig. 10. This layer is used to cover the surface of the substrate and fill in the spaces between electrodes (Fig. 10), and would also be used in such related configurations as Fig. 9(d) since the surface of the substrate in that embodiment would also need to be passivated, as well.

In claims 6 and 10, the buffer layer is met by the region (95) shown in Fig. 9(a), while Fig. 9(d) shows the ring like shape of electrode (92) as recited in claims 7 and 11.

The dimension recited in claim 12, would appear to be inherently met by Saito's discussion of the dimensions of other adjacent regions, for example at col. 10, lines 8-20.

Allowable Subject Matter

Claims 25, 40 and 42 are allowed.

Claims 47, 48, and 51-60 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2815


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward J Wojciechowicz whose telephone number is 571-272-1739. The examiner can normally be reached on Monday through Wednesday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edward J Wojciechowicz
Primary Examiner
Art Unit 2815

EW: ew


EDWARD WOJCIECHOWICZ
PRIMARY EXAMINER
GROUP 2500